

Appl. No. 09/905,718
Amdt. dated April 21, 2005
Reply to Office action of December 22, 2004

Amendments to the Specification:

Please amend paragraph [0027] as shown below.

[0027] ~~Referring to Fig. 4, the~~ ~~The~~ replication of the pattern on the template may be achieved by applying an electric field between the template and the substrate. Because the liquid and air (or vacuum) have different dielectric constants and the electric field varies locally due to the presence of the topography of the template, an electrostatic force may be generated that attracts regions of the liquid toward the template. ~~As a result of~~ ~~entailing local variations, the electric field comprises a plurality of sub electric fields defined therein, however,~~ ~~only a first and a second sub electric field are herein~~ described and are hereinafter referred to as a first and a second electric field. The magnitudes of the first and second electric fields are a function of the distance defined between the template and the substrate. More specifically, the first electric field may be associated with recess 40, wherein the magnitude of the first electric field is a function of the distance defined between recess 40 and substrate 14. The second electric field may be associated with protrusion 42, wherein the magnitude of the second electric field is a function of the distance defined between protrusion 42 and substrate 14. To that end, as a result of the distance defined between recess 40 and substrate 14 being greater than the distance defined between protrusion 42 and substrate 14, the magnitude of the first electric field is greater than the magnitude of the second electric field. Also, as a result of having the

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~~first electric field associated with recess 40 and the second electric field associated with protrusion 42, the first and the second electric fields are disposed adjacent one another. To that end, the differing magnitudes associated with the first and second electric fields define electric field gradients between the same. Also, as mentioned above, the first and second electric fields are associated with recess 40 and protrusion 42, respectively. However, template 12 comprises a plurality of protrusions and recesses. To that end, each protrusion and recess of template 12 has an electric field associated therewith, wherein each electric field associated with each protrusion and recess of template 12 is defined in the same manner as described above with respect to the first and second electric fields. To that end, template 12 comprises a plurality of electric field gradients defined between adjacent differing electric fields, and more specifically, template 12 comprises a plurality of electric field gradients defined between regions of template 12 wherein the distance between template 12 and substrate 14 changes in magnitude. At high electric field strengths, the polymerizable composition may be made to attach to the template and dewet from the substrate at certain points. This polymerizable composition may be hardened in place by polymerization of the composition. The template may be treated with a low energy self-assembled monolayer film (e.g., a fluorinated surfactant) to aid in detachment of the template the polymerized composition.~~

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Please amend paragraph [0033] as shown below.

[0033] In Figures 4 and 5, two variants of the above-described process are presented. In each variant, it is assumed that a desired uniform gap 16 may be maintained between template 12 and substrate 14. An electric field of the desired magnitude may be applied resulting in the attraction of substance 22 towards the raised portions of template 12, and in a particular example, substance 22 may be raised towards protrusion 42 of template 12 forming a contiguous region of substance 22 between two spaced apart electric field gradients. In Figure 4, gap 16 and the field magnitudes are such that substance 22 makes direct contact and adheres to template 12. A UV curing process may be used to harden substance 22 in that configuration. Once the structures have been formed, template 12 is separated from substrate 14 by either increasing gap 16 till the separation is achieved, or by initiating a peel and pull motion wherein template 12 is peeled away from substrate 14 starting at one edge of template 12. Prior to its use, template 12 is assumed to be treated with thin layer 20 that assists in the separation step.

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